Listing of Claims:

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (Original) A method of modifying an initial antibody, the method comprising recombining a first nucleic acid or character string encoding an initial antibody of Table 1 or 2, or a homologue or fragment thereof, with one or more second character string or second antibody coding nucleic acid or second homologue or second fragment thereof, thereby producing a library of nucleic acids encoding modified antibodies, or a data set of nucleic acid character strings encoding modified antibodies.

2. (Original) The method of claim 1, wherein the recombining comprises recursively performing the steps of: recombining the first nucleic acid or character string encoding an initial antibody of Table 1 or Table 2, or a homologue or fragment thereof, with one or more second character string or second antibody coding nucleic acid or second homologue or second fragment thereof to produce a library of nucleic acids encoding modified antibodies, or a data set of nucleic acid character strings encoding modified antibodies, optionally performing a second recombination step in which the members of the library or the character strings in the data set are further recombined, selecting one or more resulting recombinant nucleic acids for a desirable trait or property, thereby producing first round selected nucleic acids or character strings and, performing a third recombination step in which the first round selected nucleic acids or character strings are recombined with each other, or with one or more additional nucleic acid or character strings.

3. (Cancelled)

4. (Original) The method of claim 2, further comprising selecting one or more resulting recombinant nucleic acids or character strings for a desirable trait or property.

5. (Original) The method of claim 4, wherein the trait or property is affinity maturation.

6. (Original) The method of claim 5, wherein the affinity maturation is ex vivo affinity maturation.

7. (Original) The method of claim 4, wherein the trait or property is increased affinity as compared to an antibody encoded by the first nucleic acid or character string.

8.-9. (Cancelled)

10. (Original) The method of claim 1, wherein the recombination is performed *in vitro*, *in vivo* or *in silico*.

11. (Original) The library of nucleic acids produced by the method of claim 1.

12. (Original) One or more recombinant cells comprising one or more members of the library of claim 11.

13. (Cancelled)

14. (Original) An Ig expression cassette comprising: one or more cloning sites for heavy chain (VH) and light chain (VL) sequences; an encoded N-terminal fusion of VH and VL with an stII signal sequence; an encoded C-terminal fusion of VH and VL to human CH1 and a human CL regions; an encoded C-terminal fusion of VH/CL to a phage gIII protein; an amber stop codon at a CL/gIII border; and, a promoter selected from the group consisting of: a lacZ promoter, an alkaline phosphatase promoter, and an arabinose promoter.

15.- 27. (Cancelled)

28. (Original) A method of evolving HIV envelope proteins with improved antigenicity, the method comprising:

(a) providing a population of DNA fragments, which DNA fragments comprise at least one polynucleotide derived from at least one HIV envelope protein;

(b) recombining the population of DNA fragments to produce a library of recombinant DNA segments;

(c) optionally repeating the recombining of steps (a) and (b) one or more times;

(d) screening the library of recombinant DNA fragments to identify at least one recombinant DNA segment encoding an evolved HIV envelope protein which has acquired or evolved a desired property;

(e) repeating the recombining of steps (a) through (d) until the evolved HIV envelope protein has acquired the desired property.

29.-31. (Cancelled)

32. (Original) A library of recombinant HIV envelope protein genes produced by the method of claim 28.

33.-54. (Cancelled)

55. (Original) A method of providing a population of recombinant anti-enterotoxin monoclonal antibody nucleic acids, the method comprising:

hybridizing a set of overlapping anti-enterotoxin monoclonal antibody nucleic acid fragments; and,

elongating the set of hybridized overlapping anti-enterotoxin monoclonal antibody nucleic acid fragments, thereby providing the population of recombinant anti-enterotoxin monoclonal antibody nucleic acids.

56.- 72. (Cancelled)

73. (Original) A method for modifying the effector function of an antibody, the method comprising:

(a) providing at least one nucleic acid derived from at least one immunoglobulin heavy chain constant region;

(b) recombining the at least one nucleic acid to produce a library of recombinant immunoglobulin constant region nucleic acids;

(c) optionally repeating the recombination process of steps (a) and (b) one or more times;

(d) selecting at least one recombinant immunoglobulin constant region nucleic acid encoding a Fc region with a desired property;

(e) optionally repeating steps (a) through (d) one or more time until the Fc region has acquired a desired property.

74.- 76. (Cancelled)

77. (Original) The method of claim 73, comprising selecting the at least one recombinant immunoglobulin constant region nucleic acid in vitro.

78. (Original) The method of claim 77, wherein the selecting is performed by an assay selected from: Fc receptor binding, complement fixation, complement mediated cell lysis, and activation of a proteolytic complement component, and flow cytometry.

79. (Original) The method of claim 73, comprising selecting selecting the at least one recombinant immunoglobulin constant region nucleic acid in vivo.

80. (Original) The method of claim 79, wherein the selecting is performed by an assay selected from: serum half-life, pathogenic challenge, toxin neutralization, small molecule clearance, half-life extension of a protein pharmaceutical, and tumorigenesis.

81. (Original) The method of claim 73, wherein the desired property is selected from among: Kd of Fc receptor binding, Kd of C1q binding, and activation of C1q proteolytic activity.

82. (Original) A method of humanizing an antibody, the method comprising:

(i) selecting at least one non-human antibody with a desired antigen binding specificity;

(ii) determining or inferring the amino acid sequence of the variable domain of the selected antibody;

(iii) aligning a plurality of human antibody amino acid sequences with the amino acid sequence of the variable domain of the selected antibody;

(iv) providing oligonucleotides corresponding to at least one CDR domain of the non-human antibody and at least two corresponding variable domain framework regions of the human antibody sequences;

(v) producing at least one library of synthetically shuffled humanized antibody sequences by randomly assembling the at least one CDR sequence with the at least two framework region sequences maintaining amino acid positions relative to the plurality of human antibody amino acid sequences.

83. – 88. (Cancelled)